



TORQ Analysis of Electricians to Recreational Vehicle Service Technicians




INPUT SECTION:

Transfer	Title	O*NET	Filters		
From Title:	Electricians	47-2111.00	Abilities:	Importance Level: 50	Weight: 1
To Title:	Recreational Vehicle Service Technicians	49-3092.00	Skills:	Importance Level: 69	Weight: 1
Labor Market Area:	Maine Statewide		Knowledge:	Importance Level: 69	Weight: 1

OUTPUT SECTION:

Grand TORQ:

























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Ability TORQ				Skills TORQ				Knowledge TORQ			
Level		91		Level		90		Level		84	
Gaps To Narrow if Possible				Upgrade These Skills				Knowledge to Add			
Ability	Level	Gap	Impt	Skill	Level	Gap	Impt	Knowledge	Level	Gap	Impt
Hearing Sensitivity	46	5	50	Repairing	72	21	89	Mechanical	73	12	74
				Troubleshooting	68	11	91				
				Time Management	51	5	74				
				Installation	64	3	74				
				Active Listening	54	1	69				

LEVEL and IMPT (IMPORTANCE) refer to the Target Recreational Vehicle Service Technicians. GAP refers to level difference between Electricians and Recreational Vehicle Service Technicians.

ASK ANALYSIS

Ability Level Comparison - Abilities with importance scores over 50

Description	Electricians	Recreational Vehicle Service Technicians	Importance
Oral Comprehension	57 	55 	72 
Oral Expression	66 	53 	68 
Manual Dexterity	55 	53 	68 
Near Vision	64 	53 	68 
Problem Sensitivity	69 	50 	65 
Finger Dexterity	62 	50 	65 
Control Precision	55 	53 	65 
Extent Flexibility	 76	59 	62 



Deductive Reasoning	59			50		59
Inductive Reasoning	62			50		59
Arm-Hand Steadiness	60			44		59
Multilimb Coordination	48			46		59
Speech Recognition	50			44		59
Written Comprehension	59			46		56
Information Ordering	64			51		56
Speech Clarity	41			41		56
Visualization	62			48		50
Static Strength	62			42		50
Visual Color Discrimination	55			48		50
Depth Perception	46			37		50
Hearing Sensitivity	41			46		50

Skill Level Comparison - Abilities with importance scores over 69

Description	Electricians	Recreational Vehicle Service Technicians	Importance
Troubleshooting	 57	 68	 91
Repairing	 51	 72	 89
Installation	 61	 64	 74
Time Management	 46	 51	 74
Active Listening	 53	 54	 69

Knowledge Level Comparison - Knowledge with importance scores over 69

Description	Electricians	Recreational Vehicle Service Technicians	Importance
Mechanical	 61	 73	 74

Experience & Education Comparison

Related Work Experience Comparison				Required Education Level Comparison			
Description	Electricians	Recreational Vehicle Service Technicians		Description	Electricians	Recreational Vehicle Service Technicians	
10+ years	15%		0%	Doctoral	0%		0%
8-10 years	0%		0%	Professional Degree	0%		0%
6-8 years	0%		0%	Post-Masters Cert	0%		0%
4-6 years	7%		0%	Master's Degree	0%		0%
2-4 years	13%		34%	Post-Bachelor Cert	0%		0%
1-2 years	30%		34%	Bachelors	0%		0%
6-12 months	13%		17%	AA or Equiv	1%		4%
3-6 months	0%		4%	Some College	3%		0%
1-3 months	0%		0%	Post-Secondary Certificate	40%		39%



O-1 month	3%	0%	High School Diploma or GED	30%	52%
None	14%	8%	No HSD or GED	23%	4%
Electricians			Recreational Vehicle Service Technicians		
Most Common Educational/Training Requirement:					
Long-term on-the-job training			Long-term on-the-job training		
Job Zone Comparison					
3 - Job Zone Three: Medium Preparation Needed			2 - Job Zone Two: Some Preparation Needed		
Previous work-related skill, knowledge, or experience is required for these occupations. For example, an electrician must have completed three or four years of apprenticeship or several years of vocational training, and often must have passed a licensing exam, in order to perform the job.			Some previous work-related skill, knowledge, or experience may be helpful in these occupations, but usually is not needed. For example, a teller might benefit from experience working directly with the public, but an inexperienced person could still learn to be a teller with little difficulty.		
Most occupations in this zone require training in vocational schools, related on-the-job experience, or an associate's degree. Some may require a bachelor's degree.			These occupations usually require a high school diploma and may require some vocational training or job-related course work. In some cases, an associate's or bachelor's degree could be needed.		
Employees in these occupations usually need one or two years of training involving both on-the-job experience and informal training with experienced workers.			Employees in these occupations need anywhere from a few months to one year of working with experienced employees.		

Tasks

Electricians	Recreational Vehicle Service Technicians
Core Tasks	Core Tasks
Generalized Work Activities:	Generalized Work Activities:
<ul style="list-style-type: none"> • Making Decisions and Solving Problems - Analyzing information and evaluating results to choose the best solution and solve problems. • Communicating with Supervisors, Peers, or Subordinates - Providing information to supervisors, co-workers, and subordinates by telephone, in written form, e-mail, or in person. • Performing General Physical Activities - Performing physical activities that require considerable use of your arms and legs and moving your whole body, such as climbing, lifting, balancing, walking, stooping, and handling of materials. • Organizing, Planning, and Prioritizing Work - Developing specific goals and plans to prioritize, organize, and accomplish your work. • Updating and Using Relevant Knowledge - Keeping up-to-date technically and applying new knowledge to your job. 	<ul style="list-style-type: none"> • Updating and Using Relevant Knowledge - Keeping up-to-date technically and applying new knowledge to your job. • Getting Information - Observing, receiving, and otherwise obtaining information from all relevant sources. • Performing General Physical Activities - Performing physical activities that require considerable use of your arms and legs and moving your whole body, such as climbing, lifting, balancing, walking, stooping, and handling of materials. • Handling and Moving Objects - Using hands and arms in handling, installing, positioning, and moving materials, and manipulating things. • Operating Vehicles, Mechanized Devices, or Equipment - Running, maneuvering, navigating, or driving vehicles or mechanized equipment, such as forklifts, passenger vehicles, aircraft, or water craft.
Specific Tasks	Specific Tasks
Occupation Specific Tasks:	Occupation Specific Tasks:
<ul style="list-style-type: none"> • Advise management on whether continued operation of equipment could be hazardous. • Assemble, install, test, and maintain electrical or electronic wiring, equipment, appliances, apparatus, and fixtures, using hand tools and power tools. 	<ul style="list-style-type: none"> • Confer with customers, read work orders, and examine vehicles needing repair in order to determine the nature and extent of damage. • Connect electrical systems to outside power sources, and activate switches to test the operation of appliances and light fixtures.



- Connect wires to circuit breakers, transformers, or other components.
- Construct and fabricate parts, using hand tools and specifications.
- Diagnose malfunctioning systems, apparatus, and components, using test equipment and hand tools, to locate the cause of a breakdown and correct the problem.
- Direct and train workers to install, maintain, or repair electrical wiring, equipment, and fixtures.
- Fasten small metal or plastic boxes to walls to house electrical switches or outlets.
- Inspect electrical systems, equipment, and components to identify hazards, defects, and the need for adjustment or repair, and to ensure compliance with codes.
- Install ground leads and connect power cables to equipment, such as motors.
- Maintain current electrician's license or identification card to meet governmental regulations.
- Perform business management duties such as maintaining records and files, preparing reports and ordering supplies and equipment.
- Perform physically demanding tasks, such as digging trenches to lay conduit and moving and lifting heavy objects.
- Place conduit, pipes or tubing, inside designated partitions, walls, or other concealed areas, and pull insulated wires or cables through the conduit to complete circuits between boxes.
- Plan layout and installation of electrical wiring, equipment and fixtures, based on job specifications and local codes.
- Prepare sketches or follow blueprints to determine the location of wiring and equipment and to ensure conformance to building and safety codes.
- Provide assistance during emergencies by operating floodlights and generators, placing flares, and driving needed vehicles.
- Provide preliminary sketches and cost estimates for materials and services.
- Repair or replace wiring, equipment, and fixtures, using hand tools and power tools.
- Test electrical systems and continuity of circuits in electrical wiring, equipment, and fixtures, using testing devices such as ohmmeters, voltmeters, and oscilloscopes, to ensure compatibility and safety of system.
- Use a variety of tools and equipment such as power construction equipment, measuring devices, power tools, and testing equipment including oscilloscopes, ammeters, and test lamps.
- Work from ladders, scaffolds, and roofs to install, maintain or repair electrical wiring, equipment, and fixtures.

- Connect water hoses to inlet pipes of plumbing systems, and test operation of toilets and sinks.
- Examine or test operation of parts or systems that have been repaired to ensure completeness of repairs.
- Inspect recreational vehicles to diagnose problems, then perform necessary adjustment, repair, or overhaul.
- List parts needed, estimate costs, and plan work procedures, using parts lists, technical manuals, and diagrams.
- Locate and repair frayed wiring, broken connections, or incorrect wiring, using ohmmeters, soldering irons, tape, and hand tools.
- Open and close doors, windows, and drawers to test their operation, trimming edges to fit as necessary.
- Refinish wood surfaces on cabinets, doors, moldings, and floors, using power sanders, putty, spray equipment, brushes, paints, or varnishes.
- Remove damaged exterior panels, and repair and replace structural frame members.
- Repair leaks with caulking compound, or replace pipes, using pipe wrenches.
- Repair plumbing and propane gas lines, using caulking compounds and plastic or copper pipe.
- Reset hardware, using chisels, mallets, and screwdrivers.
- Seal open sides of modular units to prepare them for shipment, using polyethylene sheets, nails, and hammers.

Detailed Tasks

Detailed Work Activities:

- adhere to safety procedures
- adjust or set mechanical controls or components
- align or adjust clearances of vehicle body parts or components
- apply adhesives, caulking, sealants, or coatings
- assemble and install pipe sections, fittings, or plumbing fixtures
- assemble, dismantle, or reassemble equipment or machinery
- build or repair structures in construction, repair, or manufacturing setting
- conduct tests to locate mechanical system malfunction
- construct, erect, or repair wooden frameworks or structures
- cut, shape, fit, or join wood or other construction materials
- determine installation, service, or repair needed
- diagnose malfunctioning vehicle systems



equipment, and fixtures.

Detailed Tasks

Detailed Work Activities:

- adhere to safety procedures
- analyze operation of malfunctioning electrical or electronic equipment
- bend tubing or conduit
- climb ladders, scaffolding, or utility or telephone poles
- conduct training for personnel
- confer with management or users
- construct or fabricate electrical parts or fixtures
- direct and coordinate activities of workers or staff
- distinguish colors
- drive automobile, van, or light truck
- estimate cost for repair services
- fabricate, assemble, or disassemble manufactured products by hand
- inspect electrical installation for code conformance
- install electrical conduit or tubing
- install electrical fixtures or components
- install electronic power, communication, control, or security equipment or systems
- install lead-in wires to control boxes and other components
- install or replace meters, regulators, or related measuring or control devices
- install/connect electrical equipment to power circuit
- install/string electrical or electronic cable or wiring
- lay out electrical wiring for buildings, etc.
- maintain electrician's tools or equipment
- maintain records, reports, or files
- move or fit heavy objects
- order or purchase supplies, materials, or equipment
- perform safety inspections in construction or resource extraction setting
- perform safety inspections in industrial, manufacturing or repair setting
- plan layout of electrical/electronic equipment installation
- plan or organize work
- prepare reports
- read blueprints
- read tape measure
- read technical drawings
- repair electronic components, equipment, or systems
- repair or adjust measuring or control devices
- diagnose mechanical problems in machinery or equipment
- estimate time or cost for installation, repair, or construction projects
- fabricate, assemble, or disassemble manufactured products by hand
- finish or refinish floor, furniture, or related wood surfaces
- identify properties of metals for repair or fabrication activities
- inspect machinery or equipment to determine adjustments or repairs needed
- install carpet, linoleum, tile, or related material onto floors or walls
- install household appliances
- install prefabricated building components
- install siding or sheeting
- maintain repair records
- move or fit heavy objects
- obtain information from clients, customers, or patients
- paint walls or other structural surfaces
- perform safety inspections in construction or resource extraction setting
- plan or organize work
- prepare building surfaces for paint, finishes, wallpaper, or adhesives
- prime or paint vehicle or transportation equipment surfaces
- read blueprints
- read schematics
- read specifications
- read tape measure
- read technical drawings
- read vehicle manufacturer's specifications
- read work order, instructions, formulas, or processing charts
- repair or replace electrical wiring, circuits, fixtures, or equipment
- repair or replace gas, steam, sewer, or water piping or fixtures
- repair or replace malfunctioning or worn mechanical components
- repair prefabricated wooden building components
- solder electrical or electronic connections or components
- test electrical/electronic wiring, equipment, systems or fixtures
- test mechanical products or equipment
- understand service or repair manuals
- use acetylene welding/cutting torch
- use arc welding equipment
- use basic carpentry techniques
- use basic plumbing techniques
- use hand or power tools



- repair or replace electrical wiring, circuits, fixtures, or equipment
- replace electronic components
- solder electrical or electronic connections or components
- splice electric cable
- splice electric or communications trunk lines
- test electrical/electronic wiring, equipment, systems or fixtures
- test electronic or electrical circuit connections
- understand service or repair manuals
- use electrical or electronic test devices or equipment
- use hand or power tools
- use high voltage apparatus
- use interpersonal communication techniques
- use measuring devices in construction or extraction work
- use oscilloscopes in electronics repair
- use soldering equipment
- use voltmeter, ammeter, or ohmmeter

Technology - Examples

Accounting software

- Turtle Creek Software Goldenseal

Analytical or scientific software

- Electrosoft FlashWorks

- Elite ECOORD

- Elite Software Inpoint

- Elite Software Outpoint

- Elite Software Short

- Elite Software VDROD

- Lighting calculation software

- SoftEmpire Electrical Calculations

Computer aided design CAD software

- Computer aided design CAD software

- One Mile Up Panel Planner

- SmartDraw software

Data base user interface and query software

- Database software

- Insight Direct ServiceCEO

- Resolve service management software

- use hand or power woodworking tools
- use knowledge of metric system
- use knowledge of welding filler rod types
- use measuring devices in construction or extraction work
- use oral or written communication techniques
- use soldering equipment
- use spray paint equipment
- use voltmeter, ammeter, or ohmmeter
- weld together metal parts, components, or structures

Technology - Examples



- Shafer Service Systems software

- Timberline Office

Project management software

- Construction Master Pro software

- Craftsman CD Estimator

Spreadsheet software

- Spreadsheet software

Word processing software

- Socrates Contractor's Library

- Word processing software

Tools - Examples

- Pump pliers

- Adjustable wrenches

- Air compressors

- Ammeters

- AWMs

- Backhoes

- Cable tie guns

- Bandsaws

- Cutting torches

- Insulated bolt cutters

- Bear claw wire threaders

- Single reel cable trailers

- Cable splicing knives

- Inductance testers

- Resistance bridges

- Capacitance testers

- Bucket trucks

- Circuit testers

- Circuit tracers

- Current clamps

- Cable benders

- Truck cranes



- Conduit deburring tools
- Desktop computers
- Diagonal cut pliers
- Drill bits
- Frequency meters
- End cutting pliers
- Feeler gauges
- Fish tape pullers
- Fuse pulling equipment
- Gas leak detection devices
- Generators
- Ground fault circuit interrupter GFCI testers
- Claw hammers
- Hard hats
- Heat guns
- Allen wrenches
- Hole saws
- Hydraulic presses
- Transfer impedance meters
- Cable labeling machines
- Ladders
- Laser printers
- Conduit levels
- Insulated pliers
- Channel lock pliers
- Heavy duty longnose pliers
- Lighted magnet pickups
- Inspection mirrors
- Manlifts
- Meggers
- Magnetic locators
- Depth gauges



- Multimeters
- Needlenose pliers
- Nibbler cutting tools
- Notebook computers
- Insulated nutdrivers
- Double-end can socket wrenches
- Ohmmeters
- Oscilloscopes
- Personal computers
- Personal digital assistants PDA
- Phase rotation meters
- Polyvinyl chloride PVC cutters
- Ratcheting pipe wrenches
- Laser plumb bobs
- Cordless drills
- Circular saws
- Cable gripping gloves
- Punchdown tools
- Razor knives
- Tapered reamers
- Respirators
- External snap ring pliers
- Protective safety glasses
- Hacksaws
- Scaffolding
- Cabinet tip screwdrivers
- Shears
- Insulated socket sets
- Butane soldering irons/torches
- Insulated wrenches
- Wire wrap guns
- Hydraulic punching tools



- Staple guns
- Strap wrenches
- Automatic insulation strippers
- Tablet computers
- Conduit measuring tapes
- Tap and die sets
- Tension gauges
- Infrared scanners
- Threading dies
- Tin snips
- Tongue and groove pliers
- Diggers
- Two way radios
- Utility knives
- Millimeters
- Wattmeters
- Welders
- Welding hoods
- Soldering tools
- Winches
- Electricians' scissors
- Crimping pliers
- Cable butt trimmers

Labor Market Comparison

Description	Electricians	Recreational Vehicle Service Technicians	Difference
Median Wage	\$ 43,650	\$ 29,640	\$(14,010)
10th Percentile Wage	\$ 32,680	\$ 22,130	\$(10,550)
25th Percentile Wage	N/A	N/A	N/A
75th Percentile Wage	\$ 49,050	\$ 34,510	\$(14,540)
90th Percentile Wage	\$ 52,890	\$ 38,290	\$(14,600)
Mean Wage	\$ 43,700	\$ 29,710	\$(13,990)



Total Employment - 2007	2,910	70	-2,840
Employment Base - 2006	3,304	67	-3,237
Projected Employment - 2016	3,340	71	-3,269
Projected Job Growth - 2006-2016	1.1 %	6.0 %	4.9 %
Projected Annual Openings - 2006-2016	89	1	-88

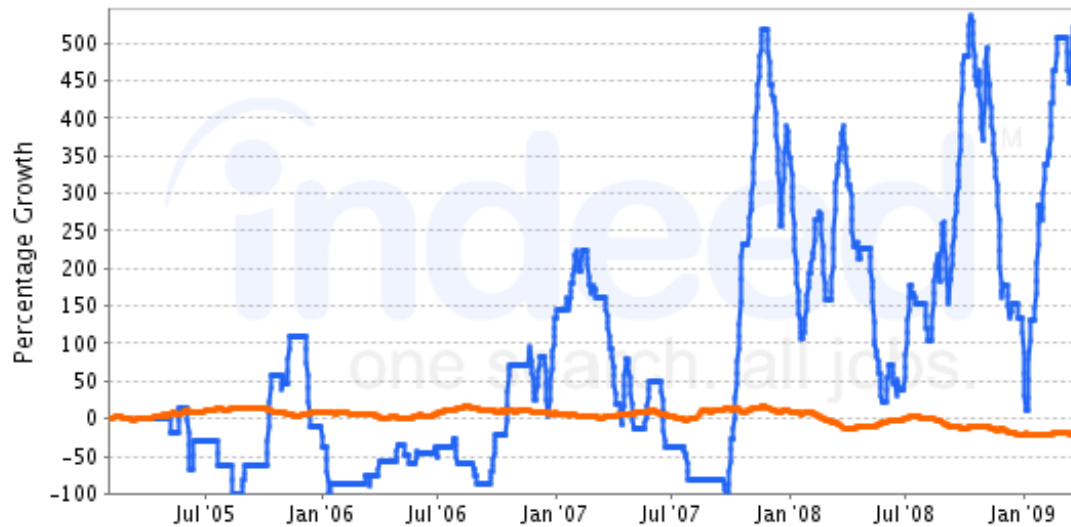
National Job Posting Trends

Trend for Electricians

Trend for
Recreational
Vehicle
Service
Technicians

Job Trends from Indeed.com

— Electrician — Recreational Vehicle Service Technician

Data from [Indeed](http://Indeed.com)

Recommended Programs

Building/Property Main. and Manager

Heavy Equipment Maintenance Technology/Technician. A program that prepares individuals to apply technical knowledge and skills in the field maintenance and repair of heavy equipment, and in the general maintenance and overhaul of such equipment. Includes instruction in inspection, maintenance, and repair of tracks, wheels, brakes, operating controls, pneumatic and hydraulic systems, electrical circuitry, engines and in techniques of welding and brazing.

Institution	Address	City	URL
Eastern Maine Community College	354 Hogan Rd	Bangor	www.emcc.edu
Eastern Maine Community College	354 Hogan Rd	Bangor	www.emcc.edu
Wasington County Community College	One College Drive	Calais	www.wccc.me.edu

Vehicle Maintenance and Repair Technologies, Other.

Vehicle Maintenance and Repair Technologies, Other. Any instructional program in vehicle and mobile equipment mechanics and repairers not listed above.



Institution	Address	City	URL
Landing School of Boat Building and Design	286 River Rd	Arundel	www.landingschool.edu
Eastern Maine Community College	354 Hogan Rd	Bangor	www.emcc.edu
Eastern Maine Community College	354 Hogan Rd	Bangor	www.emcc.edu
Northern Maine Community College	33 Edgemont Dr	Presque Isle	www.nmcc.edu
Northern Maine Community College	33 Edgemont Dr	Presque Isle	www.nmcc.edu
Northern Maine Community College	33 Edgemont Dr	Presque Isle	www.nmcc.edu

Maine Statewide Promotion Opportunities for Electricians

O*NET Code	Title	Grand TORQ	Job Zone	Employment	Median Wage	Difference	Growth	Annual Job Openings
47-2111.00	Electricians	100	3	2,910	\$43,650.00	\$0.00	1%	89
47-4021.00	Elevator Installers and Repairers	86	4	0	\$50,960.00	\$7,310.00	0%	0
49-9051.00	Electrical Power-Line Installers and Repairers	85	3	280	\$47,750.00	\$4,100.00	9%	12
51-4192.00	Lay-Out Workers, Metal and Plastic	85	2	180	\$43,870.00	\$220.00	-24%	3
49-9012.00	Control and Valve Installers and Repairers, Except Mechanical Door	85	3	170	\$47,860.00	\$4,210.00	-9%	3
49-9052.00	Telecommunications Line Installers and Repairers	84	3	720	\$56,120.00	\$12,470.00	0%	19
51-4111.00	Tool and Die Makers	83	3	160	\$51,670.00	\$8,020.00	-11%	2
49-2094.00	Electrical and Electronics Repairers, Commercial and Industrial Equipment	82	3	440	\$49,450.00	\$5,800.00	-19%	15
49-2095.00	Electrical and Electronics Repairers, Powerhouse, Substation, and Relay	81	5	20	\$60,790.00	\$17,140.00	5%	1
47-1011.00	First-Line Supervisors/Managers of Construction Trades and Extraction Workers	79	3	3,190	\$46,630.00	\$2,980.00	3%	77
49-3011.00	Aircraft Mechanics and Service Technicians	79	3	210	\$44,280.00	\$630.00	-2%	2



47-5031.00	Explosives Workers, Ordnance Handling Experts, and Blasters	78	2	0	\$44,240.00	\$590.00	0%	0
49-9061.00	Camera and Photographic Equipment Repairers	77	3	0	\$44,660.00	\$1,010.00	0%	0
17-3023.03	Electrical Engineering Technicians	77	3	430	\$45,180.00	\$1,530.00	-20%	9
11-9021.00	Construction Managers	76	3	970	\$72,320.00	\$28,670.00	4%	35

Top Industries for Recreational Vehicle Service Technicians

Industry	NAICS	% in Industry	Employment	Projected Employment	% Change
Other motor vehicle dealers	441200	69.59%	9,741	11,854	21.69%
Automotive mechanical and electrical repair and maintenance	811110	4.13%	578	686	18.73%
Automobile dealers	441100	3.93%	550	623	13.44%
Self-employed workers, primary job	000601	3.55%	497	529	6.54%
Automotive body, paint, interior, and glass repair	811120	3.37%	471	550	16.76%
Motor vehicle body and trailer manufacturing	336200	2.82%	395	387	-2.15%
Other miscellaneous store retailers	453900	1.85%	259	278	7.20%
Automotive parts, accessories, and tire stores	441300	1.81%	253	247	-2.44%
Motor vehicle and motor vehicle parts and supplies merchant wholesalers	423100	1.78%	249	284	14.14%
Automotive equipment rental and leasing	532100	1.20%	168	191	13.46%
Commercial and industrial machinery and equipment (except automotive and electronic) repair and maintenance	811300	0.92%	129	137	5.82%

Top Industries for Electricians

Industry	NAICS	% in Industry	Employment	Projected Employment	% Change
Electrical contractors	238210	62.85%	443,111	481,763	8.72%
Self-employed workers, primary job	000601	9.20%	64,835	71,620	10.46%
Local government, excluding education and hospitals	939300	2.23%	15,740	18,334	16.48%
Self-employed workers, secondary job	000602	1.55%	10,924	11,833	8.32%
Nonresidential building construction	236200	1.39%	9,799	11,384	16.18%
Employment services	561300	1.38%	9,746	8,313	-14.70%
Plumbing, heating, and air-conditioning contractors	238220	1.25%	8,792	10,294	17.09%



Motor vehicle parts manufacturing	336300	1.16%	8,149	6,727	-17.45%
Electric power generation, transmission and distribution	221100	1.01%	7,125	6,795	-4.64%
Colleges, universities, and professional schools, public and private	611300	0.89%	6,241	7,239	16.00%
Residential building construction	236100	0.77%	5,415	6,322	16.76%
Federal government, excluding postal service	919999	0.67%	4,750	4,656	-1.98%
Ship and boat building	336600	0.53%	3,766	4,370	16.06%
Coal mining	212100	0.48%	3,382	3,542	4.71%
State government, excluding education and hospitals	929200	0.47%	3,329	3,387	1.75%